DOCUMENT RESUME

ED 474 642 EA 032 451

AUTHOR	Din, Feng S.; Isack, Lori R.; Rietveld, Jill
TITLE	Effects of Contingency Contracting on Decreasing Student Tardiness.
PUB DATE	2003-00-00
NOTE	15p.; Paper presented at the Annual Conference of the Eastern Educational Research Association (26th, Hilton Head Island, SC, February 26-March 1, 2003).
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Behavior Modification; *Contingency Management; High Schools
IDENTIFIERS	*Tardiness

ABSTRACT

A contingency contract program was implemented in this study to determine the effects of contingency contracting on decreasing student tardiness in high school classrooms. The participants were 32 high school students. Of the 32 participants, 16 were randomly assigned to the experimental group and the other 16 to the control group. The participants were selected from eight classes (four students from each class). Two students from each class were selected for the experimental group, the other 2 for the control group. A contingency contract was signed individually with the students in the experimental group. The treatment lasted for 12 weeks. Students' tardiness records from the treatment stage were compared via analysis of covariance (ANCOVA) with those for the pre-treatment 12-week stage. Results from data analysis indicate that participants in the experimental group showed significantly fewer tardiness counts than those in the control group, which suggests that this behavior modification technique can be effectively applied to decrease student tardiness by high school teachers. (Contains 25 references and 1 table.) (RT)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 474 642

Running head: EFFECTS OF CONTINGENCY CONTRACTING

Effects of Contingency Contracting on Decreasing Student Tardiness

Feng S. Din

Union College

Lori R. Isack

Jill Rietveld

Crete-Monee High School

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

F. Din

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Paper presented at the 26th Annual Conference of the Eastern Educational Research Association, Hilton Head Island, S.C., Feb.26 - Mar.1, 2003

EA 032 451

 BEST COPY AVAILABLE

Abstract

A contingency contract program was implemented in this study to determine the effects of contingency contracting on decreasing student tardiness in high school classrooms. The participants were 32 high school students. Of the 32 participants, 16 were randomly assigned to the experimental group and the other 16 to the control group. The participants were selected from 8 classes: 4 students from each class; 2 from each class were selected for the experimental group, the other 2 for the control group. A contingency contract was signed individually with the students in the experimental group. The treatment lasted for 12 weeks. Students' tardiness records from the treatment stage were compared via ANCOVA with those for the pre-treatment 12-week stage. Results from data analyses indicated that participants in the experimental group showed significantly fewer tardiness counts than those in the control group, which suggests that this behavior modification technique can be effectively applied to decrease student tardiness by high school teachers.

Effects of Contingency Contracting on Decreasing Student Tardiness

In the field of behavior modification, a variety of techniques are used to either increase a desired behavior or to decrease an unwanted behavior. Contingency contracting is one of such techniques that have been with us for decades (Council for Exceptional Children, 1990; Westinghouse Learning Corporation, 1967). In addition to its functional effects, contingency contracting has another advantage, according to Schulman (1969): It also increases student motivation by making the student-teacher relationship cooperative instead of authoritarian--Teachers fulfill their part of the contract by giving individual help; students, by performing the assignments.

Researchers of various disciplines have studied the effects of contingency contracting as a behavior change technique. For example, in the field of behavior medicine, Jones and Jensen (1975) investigated its effect on weight control; Spring, Sipich, Trimble, and Goeckner (1978) studied its function on smoking modification; Ross (1974) examined its impact on controlling adult nailbiting. In the field of family therapy, Stedman (1977) attempted to use it to improve child's behavior and marital communications; Hayes (2000) tested its effect on increasing appointment keeping among low income families. In addition, school supervisors used this technique to alter the behavior of teachers; teachers applied it to manage student behaviors in the classrooms (Toney, 1979). However, the literature also indicates that contingency contracting has been widely studied in changing student behavior in the classrooms.

One body of the literature provides some knowledge on the effects of contingency contracting in changing the performance of students at different grade levels on different tasks.

Ruthven (1984) studied the impact of contingency contracting on college students' performance in academic learning, and found that students in the short contract group performed significantly higher than those in the long contract group. Studying another group of college students, Lewis and Wall (1979) observed that students in the negotiated contract group obtained significantly higher final grades than those in other conditions. In an earlier investigation, Klein and Mechelli (1973) implemented contingency contracting to increase on-task and task completion behaviors of a 1st grade child. As a result, the child's task completion rate was increased, and the on-task and task completion level rose when contract requirements were raised. With a different focus, Molteni and Garske (1983) tested the effect of contingency contracting on childhood memory recollection. Results of the study showed that children in the contract condition complied significantly more to the specific aspects of the contracted task than those in the control group. With respect to the effect of contingency contracting on arithmetic performance of a 3rd grade girl and a 6th grade boy, Kidd (1988) found that inclusion of a negative component was not necessary, and use of a positive component alone was sufficient to maintain high levels of completion and accuracy in daily math assignments. Aiming at studying its impact on a student learning behavior, Poston (1991) tested contingency contracting to see whether it would increase the assignment completion rate of 10 6th grade students. Results of the study indicated that 7 students increased assignment completion by 50%, and exceeded weekly assignment 80% of the time. In a recent study, Newstrom, McLauglin and Sweeney (1999) applied the same technique and significantly improved the proper capitalization and punctuation skill of a 9th grader with behavior disorder. As this body of literature indicates, contingency contracting used as a

basic behavior intervention method has resulted in the increase of student performance on various tasks.

The literature also shows that contingency contract has been tested for decreasing inappropriate behaviors of school children: In an earlier study, Vaal (1973) used the contingency contract technique to treat a 13-year-old school phobic boy, who had been absent 94% of the school days over a 6-month period. Following the intervention, the student achieved a perfect record of attendance for the remaining 3 months of school. In another study, Novell (1994) applied this technique to reducing principal-initiated student suspensions resulting from inappropriate behavior among middle school students. The program in this study was rehabilitative rather than punitive in design. Novell's data analysis revealed an impressive improvement among those in need of academic structure, but only minimal effect among the reluctant participants. Moreover, in two case studies, Brooks (1974) examined the effect of contingency contracting on reducing student truancy, and as a result of the behavior contacting the students' school attendance was successfully increased. In a similar study, Spencer-Dunbar (1976) reported a statistically significant, steady decline in truancy among 9th graders with the use of contingency contracting.

The literature also includes studies on contingency contracting with regard to its effects on decreasing student disruptive behaviors in classrooms. De Martini-Scully, Bray and Kehle (2000) examined the effect of a packaged contingency contract program on reducing disruptive behaviors of 2 8-year-old students. The intervention resulted in the reduction of the disruptive behaviors of the 2 students. Focusing on a relatively large group of children, Gundel (1981)

studied the effect of using this technique on changing disruptive behaviors of 36 emotionally disturbed boys. Gundel found the contingency contracting to be more effective than either self-regulation or teacher regulation combined with self-regulation. In a similar effort, Stover (1994) applied this technique to decrease the inappropriate call-outs of 9 7th and 8th grade boys with behavior disorders in a self-contained classroom. Data analysis from this behavior intervention program revealed that the students showed significant improvements in the target behavior, which were also maintained during the fading period. In addition, George and Rinehart (1976) used contingency contracting to successfully reduce in-class out-of-seat behavior of a 9-year-old child with learning disability. Similarly, Edgar (1980) found this type of behavior contracting to be sufficient in reducing the absences of high school female students.

As the above brief literature review shows, in the education field, contingency contract has been applied to increase student performance on different tasks, and also to decrease inappropriate and disruptive behaviors of students in schools of different grade levels. The educational research literature basically indicates that contingency contracting has been tested to be effective in changing the target behaviors specified in those studies. However, the literature provides no empirical evidence on whether contingency contracting can effectively decrease high school students' tardiness. The purpose of the study was to determine whether the use of contingency contract helps reduce tardiness of high school students.

Method

Participants

The participants of the study consisted of 32 students in grades 9 to 12 from a high school in the suburban Chicagoland area. They came from 5 science classes and 3 English classes. Of the

32 students, 10 were African American females, 6 were Caucasian females, 8 African American males, 1 Hispanic male, and 7 Caucasian males.

Most of the participating students were from families with annual income between $14,000 and $30,000, with an average number of family members at four. The two participating teachers were Caucasian, female: One was an English teacher, the other taught science. The teachers had 2 years of teaching experience.

Definition of Term

Tardiness is defined in this study as "coming to class late". Contingency contracting was implemented to deal with this type of tardiness, not the "coming to school late" type.

Procedure & Design

Based on the attendance records, the participating teachers selected 4 students from each of the 8 classes. Those who had the highest number of tardiness counts in the class during the school year were selected. Of the 4 selected participants from each class, 2 were randomly (by a random picking procedure) assigned by the researchers to the experimental group and the other 2 were placed in the control group.

Each student in the experimental group received a contingency contract designed by the researchers. The teachers explained the contract to the participating students. The contract stated that the goal of the program was to decrease the number of tardy counts for the student per week. The conditions of the contract stated that student who agreed to participate would receive one piece of small candy when they came to class on time. The small candy can be a Starburst, a Hershey Kiss, or a Tootsie Roll. If she/he came to class on time for the entire week, the student would receive a bigger piece of candy, such as: a Kit Kat, a Reece's Peanut Butter Cup, or a

Butterfinger. Any weekly absences would not be used to count against the student. The students were also told that this contract was confidential for both the teacher and the participating student. Any breach of this confidentiality will render the contract null and void. After the participating students read and agreed to the contract, they signed and dated it, returned it to the teachers. The teachers implemented the contract the following school day. Students of the control group did not have any knowledge of the contract, the rewards, or the research project.

As the baseline data, the researchers collected the participating students' attendance records from the first and second quarter of the school year. During the experimental stage, the teachers recorded student attendance by roll calling at the beginning of each class session. This practice was applied to all the 8 classes, and also was used in the entire school as a school-wide routine practice for attendance recording. The researchers used the first 12 weeks' (of the 1st and 2nd quarter) recordings as baseline data, which showed that of the 32 participants, 19 were tardy on average 2 times per week, 12 were tardy 3 times per week, 1 was tardy 4 times per week.

During the treatment stage, the participating teachers recorded each of the participating students' tardiness daily on the computer via a software program called "Grade Machine" for 12 weeks. At the end of the 12 weeks, the researchers collected the recordings for data analysis. This study utilized an AB design.

As part of the data analysis, the total number of each student's tardiness counts during pre- and post-treatment stage was tallied. Then the group means (for the number of times of tardiness) of the control group during pre-treatment and post-treatment stage were calculated; for the experimental group, the pre- and post-treatment group means were also tallied. An Analysis

of Covariance (ANCOVA) was conducted to compare the between-group differences in the number of times of tardiness.

Results

The data analyses indicated that for the control group, the pre-treatment mean was 26.88, the post-treatment mean was 21.33. For the experimental group, the mean for pre-treatment stage was 27.12 and that for the post-treatment stage was 11.37. Results from ANCOVA analyses showed that the experimental group had significantly fewer counts of tardiness than the control group. See Table 1.

Discussion

Coming to class on time for students is generally considered by educators to be important and essential for learning. Tardiness not only poses, to a certain degree, disruption to class activities, but also affects students' learning for missing part of the instructions. Thus teachers and school administrators use a variety of measures to deal with students' tardiness. Arriving at school late is one type of tardiness; coming to class late is another type of tardiness. This study attempted to use contingency contract to decrease the second type of tardiness, which occurs more often in secondary schools than in elementary schools. This is because secondary school students need to change classrooms for different courses. With the behavior contract design used in this study, there was no negative component in the contingency. The reward for the students under contract was to be earned by coming to class on time, otherwise the students would not earn the reward. It seems that the reward used as a contingency in this study functioned as a sufficient incentive for the students under contract to change their tardiness behavior. This effect seems to be similar to that in Kidd's study (1988). According to Kidd, a negative component

was not necessary for changing the completion rate of students' math assignments. These findings may suggest that in some cases a negative component to the contingency contract may not be necessary in order to achieve the desired effects of behavior change. The positive contingency component used in this study seemed to be a powerful change agent, which functioned as a strong incentive for students to come to class on time.

This contingency contracting was implemented in 8 high school classrooms to 16 students. The treatment was repeated for 8 times to 8 different small groups. The recorded attendance records for the treatment stage showed a notable decrease in student tardiness over a 12-week period. These measures produced empirical evidence on the effects of this behavior contracting. As described in the Method section of this article, the contract used in this study is easy to design and simple to use. It can be easily applied by any high school teacher for similar purpose.

Conclusion

In an effort to search for an effective way to decrease students' tardiness in high school classrooms, a contingency contract program was tested in this study. The program was implemented for 12 weeks with 8 different groups of students by 2 teachers. Results from the data analyses suggest that contingency contract can be used effectively by high school teachers to decrease students' tardiness.

References

Brooks, D. B. (1974). Contingency contracts with truants. *Personnel and Guidance Journal, 52*(5), 316-320.

Council for Exceptional Children. (1990). *Managing inappropriate behavior in the classroom.* (ERIC Document Reproduction Service No. ED371506)

De Martini-Scully, D., Bray, M. A., & Kehle, T. J. (2000). A packaged intervention to reduce disruptive behaviors in general education students. *Psychology in the Schools, 37*(2), 149-156.

Edgar, R. M. (1980). Contingency contracting with high school females to reduce absenteeism: Results and follow-up. *Dissertation Abstracts International, 40* (9-B), 4459-4460.

George, T. W., & Rinehart, R. L. (1976). Increasing the effectiveness of a class-wide contingency contract in elementary reading and language arts. *Reading Improvement, 13* (3), 154-158.

Gundel, R. C. (1981). The interaction of locus of control with three behavioral procedures in the modification of disruptive behavior in emotionally disturbed boys. *Multivariate Experimental Clinical Research, 5*(3), 99-108.

Hayes, R. A. (2000). The effects of behavioral contracting and preferred reinforcement on appointment keeping. *Behavior Change, 17*(2), 90-96.

Jones, D., & Jensen, C. B. (1975). *The use of a deviation line in contingency contracting for weight control.* (ERIC Document Reproduction Service No. ED137632)

Kidd, T. A. (1988). Positive and negative consequences in contingency contracts: The relative effectiveness on arithmetic performance. *Education & Treatment of Children, 11*(2),

118-126.

Klein, R. D., & Mechelli, T. (1973). *The modification of on-task and task completion behaviors in an elementary-school child.* (ERIC Document Reproduction Service No. ED104549)

Lewis, J. M., & Wall, S. M. (1979). The effects of contingency contract negotiation and management on the academic achievement and self concept of community college students. *Improving Human Performance Quarterly, 8*(3), 202-211.

Molteni, A. L., & Garske, J. P. (1983). Effects of contracts on childhood memory recollection: A controlled clinical analogue. *Journal of Clinical Psychology, 39*(6), 914-919.

Newstrom, J., McLaughlin, T. F., & Sweeney, W. J. (1999). The effects of contingency contracting to improve the mechanics of written language with a middle school student with behavior disorders. *Child & Family Behavior Therapy, 2*(1), 39-48.

Novell, I. (1994). *Decreasing school suspensions among middle school children by implementing a rehabilitative in-room suspension.* (ERIC Document Reproduction Service No. ED371833)

Poston, R. (1991). *Increasing assignment completion of sixth grade students through behavior modification.* (ERIC Document Reproduction Service No. ED339455)

Ross, J. A. (1974). The use of contingency contracting in controlling adult nailbiting. *Journal of Behavior Therapy & Experimental Psychiatry, 5*(1), 105-106.

Ruthven, A. J. (1984). *Contingency contracting in a personalized system of instruction class.* (ERIC Document Reproduction Service No. ED245642)

Schulman, B. R. (1969). *Teaching the high ability, low achieving student: Individualized instruction in action; an attack upon human isolation.* (ERIC Document Reproduction

Service No. ED032046)

Spencer-Dunbar, L. H. (1976). *The effects of contingency management as a means of reducing truancy.* (ERIC Document Reproduction Service No. ED221642)

Spring, F. L., Sipich, J. F., Trimble, R. W., & Goeckner, D. J. (1978). Effects of contingency and noncontingency contracts in the context of self-control-oriented smoking modification program. *Behavior Therapy, 9*(5), 967-968.

Stedman, J. M. (1977). Behavior therapy strategies as applied to family therapy. *Family Therapy, 4*(3), 217-224.

Stover, K. (1994). *The effects of a token economy system on the inappropriate verbalizations of emotional support students.* (ERIC Document Reproduction Service No. ED381947)

Toney, J. W. (1979). *A summary of operant conditioning techniques for use by supervisors and teachers.* (ERIC Document Reproduction Service No. ED166370)

Vaal, J. (1973). Applying contingency contracting to a school phobic: A case study. *Journal of Behavior Therapy and Experimental Psychology, 4*(4), 371-373.

Westinghouse Learning Corporation. (1967). *Procedures for establishing a contingency managed classroom.* (ERIC Document Reproduction Service No. ED021823)

Table 1

ANCOVA Tests of Between-Group Differences

Source	SS	df	MS	F	p
Correlation	49.33	1	49.33	.58	.45
Class	799.94	1	799.94	9.4	.005
Error	2467.86	29	85.09		

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

ERIC

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: Effects of Contingency Contracting on Decreasing Student Tardiness	
Author(s): Feng S. Din, Lori R. Irack, Jill Kierveld	
Corporate Source: Union College	Publication Date: 3-4-2003

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic/optical media, and sold through the ERIC Document Reproduction Service (EDRS) or other ERIC vendors. Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following two options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all **Level 1** documents

The sample sticker shown below will be affixed to all **Level 2** documents

[X]

Check here
For Level 1 Release:
Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical) *and* paper copy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Level 1

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Level 2

[ ]

Check here
For Level 2 Release:
Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical), but *not* in paper copy.

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed at **Level 1**.

"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic/optical media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."

Sign here→ please Signature: Feng Din	Printed Name/Position/Title: Feng S. Din	
Organization/Address: 310 College St. Barbourville, KY 40906	Telephone: 606-546-1245	FAX: 606-546-1330
	E-Mail Address: fdin@unionky.edu	Date: 3-4-03